No.



200000108

THE UNIVERSALES OF ANTERIOA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Hornbeck Seed Co., Inc.

There has been presented to the

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE ITTLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, AR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN DUGING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY SECTION ACT. (84 STAT. 1942, AS AMENDED, 7 U.S.C. 2321 ET SEO.)

SOYBEAN

'HBK 5991'

In Testimony Mexent, I have hereunto set my hand and caused the seal of the Hant Dariety Protection Office to be affixed at the City of Washington, D.C. this tenth day of June, in the year two thousand two.

20m2hl

Flant Variety Protection Office Agricultural Marketing Service anterena. Agricultur U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

The following state nents are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

(See reverse for instructions and information collection burden states

APPLICATION FOR PLANT (Instructions and information)	n collection burden	statement on rev	erse)	2421). Information is held confident	es oma cermin	Sie is issued (7 U.S.C. 2426).	
1 NAME OF OWNER	2. TEMPORARY DESIGN EXPERIMENTAL NAME	ATION OR	3. VARIETY NAME				
Hornbeck Seed	HBK X591-9	8	HBK 5991				
4. ADDRESS (Street and No., or R.F.D. N P.O. Box 472		5. TELEPHONE (include a		FOR OFFICIAL USE ONLY			
210 Drier Road			•	870-946-20	8 /	PVPO NUMBER	
DeWitt, Arkans	as 72042			6. FAX (include area code)	· <u>-</u>	200000108	
Jonico, Inthans	45 /2042		* * * :	870-946-32	53	FILING DATE	
7 IF THE OWNER NAMED IS NOT A "PER	SON", GIVE FORM OF	8. IF II	NCORPORATED, GIVE	9. DATE OF INCORPORAT	(tON	1 /	
organization (corporation, padnershi	p, association, etc.)	SIA	TE OF INCORPORATION	February 2		5 12/29/99	
10 NAME AND ADDRESS OF OWNER REI	PRESENTATIVE(S) TO SE	ERVE IN THIS APPLIC	ATION. (First person listed w	nll receive all papers)		FILING AND EXAMINATION	
James Thomas	7					F FEES:	
Hornbeck Seed (P.O. Box 472	company, I	nc.				E 3700	
DeWitt, Arkansa	as 72042	•				R DATE 12/22/9	
						E CERTIFICATION FEE:	
						* 320/1	
					. [DATE 4/3/02	
11 TELEPHONE (Include area code)	12. FAX (Include area	code)	13. E_MAIL		14 CROF	KIND (Common Name)	
870-946-2087	870-946-	3253			ybean.		
15. GENUS AND SPECIES NAME OF CROP	<u> </u>		46 644114				
Claret no man			16. FAMILY NAME (Bota Leguminos		HE VARIETY A FIRST GENERATION CID?		
	•				[YES KI NO	
 CHECK APPROPRIATE BOX FOR EACH reverse) 	ATTACHMENT SUBMITTI	ED (Follow instructions		E OWNER SPECIFY THAT SEED (ED SEED? See Section 83(a) of	OF THIS VAR	HETY BE SOLD AS A CLASS OF riety Protection Act)	
 a. X b. X Exhibit A. Origin and Breeding I b. X Exhibit B. Statement of Distinct 	•			☐ YES (If "yes", answer items 20 ဩ NO (If "no," go to item 22) and 21 below)			
c. X Exhibit C. Objective Description			20. DOES THE	OWNER SPECIFY THAT SEED (F THIS VAR	IETY BE LIMITED AS TO NUMBER	
d. Exhibit D. Additional Description			OF GENER	OF GENERATIONS?			
e.	translad coords as factures						
verification that hissue culture will repository)	be depositied and maintai	ined in an approved pu		O ITEM 20, WHICH CLASSES OF	_		
Filing and Examination Fee (\$2,4 States" (Mail to the Plant Variety	50), made payable to "Tre Protection Office)	asurer of the United		FOUNDATION REGIS	IEKED [] CERTIFIED	
 HAS THE VARIETY (INCLUDING ANY HAR FROM THIS VARIETY BEEN SOLD, DISPO OTHER COUNTRIES? 	ED 23. IS THE VAL S. OR PROPERT	23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)?					
YES	Ø NO			YES	5	д ио	
IF YES, YOU MUST PROVIDE THE DATE OF FOR EACH COUNTRY AND THE CIRCUM	OF FIRST SALE, DISPOS STANCES. (Please use s	ITION, TRANSFER, O pace indicated on reve	R USE IF YES, PLE Prse.) REFERENC	ASE GIVE COUNTRY, DATE OF I E NUMBER, (Please use space in	FILING OR IS dicated on re	SUANCE AND ASSIGNED verse.)	
The owners declare that a viable sample of b for a tuber propagated variety a tissue culture	easic seed of the variety will be deposited in a pu	ill be furnished with ap ablic repository and ma	plication and will be replenish	hed upon request in accordance wi	th such regul	ations as may be applicable, or	
The undersigned owner(s) is(are) the owner and is entitled to protection under the provision	of this paymetty seems down				orm, and stat	ole as required in Section 42,	
Owner(s) is(are) informed that false represen					<i>, </i>	7	
GNATURE OF OWNER (applicar	it)		SIGNATURE OF	WINER		7	
James & Thon	rab_		191	Willbull			
ME (Please print or type)			NAME (Please p	nint or type).			
James D. Thomas	····		Jon Ho	ornbeck			
PACITY OR TITLE Soybean Breeder	Į.	^{ATE} 1/5/2000	CAPACITY OR T	TITLE		DATE 1/5/2000	
Polnean preeder		1/3/4000	CFO			11/3/2000	

EXHIBIT AHORNBECK SEED COMPANY, INC. APPLICATION FOR HBK 5991

ORIGIN AND BREEDING HISTORY

Summer	1989	Original cross was made: A6297 x NK S59-95
Summer	1990	F1 plants were advanced to F2 seed.
Winter	1990-91	F2 and F3 advanced by modified single seed descent
Summer	1991	F4 single plants were harvested
Winter	1991-92	F4 single plant progeny were screened with race 3 cyst nematode(Heterodera glycines).
Summer	1992	F4/F5 progeny rows screened in the field. One row, #25350 was selected, harvested in bulk, and designated as 6720.
Summer	1993	6720 was yield tested in trials at locations throughout the midsouth and southeastern United States. During this period it was determined to be stable and unique and breeding true for characteristics described in Exhibit "C" of this application.
Summers	1994/96	6720 was further evaluated in advanced trials throughout the southern United States. Seed increases initiated.
Summer	1997	Continued in wide scale test across the south as HBK X9767. Breeder seed increase continued.
Winter	1997-98	Breeders Seed increase initiated in winter production- Argentina, SA
Summer	1998	Entered into wide scale University test as HBK X591-98. Seed increased to 1601 units.
Spring	1999	Released as HBK 5991 and planted large acreage for 2000 sales
Summer	1999	Production from Breeders seed continued for 2000 sales and wide scale University and Company tests continue across the southern United States.

EXHIBIT B

HORNBECK SEED COMPANY, INC. APPLICATION FOR HBK 5991

NOVELTY STATEMENT

To our knowledge, HBK 5991 most resembles A6297 and NK S59-95. Differences include but are not restricted to the following:

HBK 5991 Compared to A6297

- 1) HBK 5991 has tawny pubescence whereas A6297 has grey.
- 2) HBK 5991 is resistant to stem canker whereas A6297 is susceptible.
- 3) A6297 is 25 cm taller
- 4) a 6297 has smaller seed; 13 gms/100 as compared to 14 gms/100 for HBK 5991.

HBK 5991 Compared to NK S59-95

- 1) HBK 5991 has white flowers whereas NK S59-95 has purple.
- 2) HBK 5991 is susceptible to Southern Root Knot Nematode where as NK S59-95 is resistant.
- 3) HBK 5991 is susceptible to Peanut Nematode where as NK S59-95 is resistant.

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE LIVESTOCK, MEAT, GRAIN & SEED DIVISION PLANT VARIETY PROTECTION OFFICE BELTSVILLE, MARYLAND 20705

EXHIBIT (Soybean

OBJECTIVE DESCRIPTION OF VARIETY SOYBEAN (Glycine max L.)

	-	
NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Hornbeck Seed Co., Inc.	HBK <u>X</u> 591-98	НВК 5991
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Cod	el	
P.O. Box 472 210 Drier Road DeWitt, Arkansas 72042		PVPO NUMBER 2000 0 0 1 0 8
Choose the appropriate response which characterizes the var in your answer is fewer than the number of boxes provided, Starred characters ** are considered fundamental to an adequate when information is available. 1. SEED SHAPE:		
2 L W T Soherical (L/W, L/T, and T/W ratios = < 1.2) 3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)	7 - Soherical Flattened (I	_/W ratio > 1.2; L/T ratio = < 1.2) /T ratio > 1.2; T/W > 1.2)
★ 2. SEED COAT COLOR: (Mature Seed)		
1 = Yellow 2 = Green 3 = Brown	4 = Black 5 = Other (S	pecify)
3. SEED COAT LUSTER: (Mature Hand Shelled Seed) 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy')	; 'Gasoy 17')	
★ 4. SEED SIZE: (Mature Seed)		
1 4 Grams per 100 seeds		
5. HILUM COLOR: (Mature Seed)		
	Gray 5 = Imperfect Black	6 = Black 7 = Other (Specify)
6. COTYLEDON COLOR: (Mature Seed)		
1 = Yellow 2 = Green		
7. SEED PROTEIN PEROXIDASE ACTIVITY:		
0 1=Low 2=High 0= not tested		
8. SEED PROTEIN ELECTROPHORETIC BAND:		
0 1 = Type A (SP1 ^a) 2 = Type B (SP1 ^b)	= not tested	
9. HYPOCOTYL COLOR:		
1 = Green only ('Evans'; 'Davis') 2 = Green with bro 3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71') 4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Cok	onze band below cotyledons ('Woo er Hampton 266A')	odworth'; 'Tracy')
10. LEAFLET SHAPE:	· · · · · · · · · · · · · · · · · · ·	
3 1 = Lanceolate 2 = Oval 3 = Ovate	4 = 0.4 (0	

	11. LEAF	LET SIZE:				· A A	<i>2</i> 8 : 1
	2	1 = Small ('Amsoy 71'; 'A5312') 3 = Large ('Crawford'; 'Tracy')	2 = Medium ('Corsoy 79'; 'Gasoy 17')	20	0000	<i>1</i> 1 U	8
-	12. LEAF	COLOR:		, ·			.
	2	1 = Light Green ('Weber'; 'York') 3 = Dark Green ('Gnome'; 'Tracy')	2 = Medium Green ('Corsoy 79'; 'Braxton')				
*	13. FLOW	ER COLOR:		····			
	. 1	1 = White 2 = Purple	3 = White with purple throat				
*	14. POD C	OLOR:	N. C.				
	1	1 = Tan 2 = Brown	3 = Black				
*	15. PLANT	PUBESCENCE COLOR:	·				
	2	1 = Gray 2 = Brown (Tawny)					
1	6. PLANT	TYPES:					
	2	1 ≃ Slender ('Essex'; 'Amsoy 71') 3 = Bushy ('Gnome'; 'Govan')	2 = Intermediate ('Amcor'; 'Braxton')				
* 1	7. PLANT	HABIT:					
	1	1 = Determinate ('Gnome'; 'Braxton') 3 = Indeterminate ('Nebsoy'; 'Improved P	2 = Semi-Determinate ('Will') 'elican')				
★ 18	B. MATUR	ITY GROUP:					
	0 8	1 = 000 2 = 00 3 = 0 9 = VI 10 = VII 11 = VI	4 = I 5 = II 6 = III 7 II 12 = IX 13 = X	= IV	8 = V		
★ 19	. DISEASI	REACTION: (Enter 0 = Not Tested; 1 =	Susceptible: 29 Resistant) 3=moderate				
		RIAL DISEASES:	•				
*	2	Bacterial Pustule (Xanthomonas phaseoli v	ar sojensist				
*		Bacterial Blight (Pseudomonas glycinea)					
4		Nildfire (Pseudomonas tabaci)			•		
	ركا	DISEASES:					
*			er field conditions in 1999				
	F	rogeye Leaf Spot (Cercospora sojina)			•		
*	F	lace 1 Race 2 Ra	Race 3 Race 4 Race 5 3	Other	(Specify)		
	τ [0]	arget Spot (Corynespora cassiicola)	Race	_,	mon to	Ark.	
	0 0	owny Mildew (Peronospora trifoliorum va				-	
		owdery Mildew (Microsphaera diffusa)	•				
*	0 B	own Stem Rot (Cephalosporium gregatum	e de la companya de La companya de la co				
	\equiv	em Canker <i>(Diaporthe phaseolorum</i> var. <i>ca</i>					

	TION: (Enter 0 = Not Tested; 1 = Susceptibl	e; 2 = Resistant) (Continued)	3=moderate resistant
	EASES: (Continued)		200000108
★ 1 Pod and	Stem Blight (Diaporthe phaseolorum var; soj	iae)	
1 Purple S	eed Stain (Cercospora kikuchii)	,	
1 Rhizocte	onia Root Rot (Rhizoctonia solani)		
Phytoph	thora Rot (Phytophthora megasperma var. so,	jae)	
★ 0 Race 1	0 Race 2 1 Race 3	0 Race 4 0 Ra	ce 5 0 Race 6 0 Race 7
Race 8	0 Race 9 0 Other (Special	fy)	
VIRAL DISEAS	SES:		
0 Bud Bligh	t (Tobacco Ringspot Virus)		
0 Yellow M	osaic (Bean Yellow Mosaic Virus)		
★ Cowpea N	Aosaic (Cowpea Chlorotic Virus)		
0 Pod Motti	e (Bean Pod Mottle Virus)		
★ 0 Seed Mott	le (Soybean Mosaic Virus)		
NEMATODE DIS	SEASES:		
Soybean C	yst Nematode (Heterodera glycines)		
★ 0 Race 1	0 Race 2 2 Race 3	0 Race 4 3 Orbe	(a
0 Lance Nen	natode (Hoplolaimus Colombus)	- Nace 4 Othe	s (Specify)
. 🗀	oot Knot Nematode (Meloidogyne incognita)	1	-
	oot Knot Nematode (Meloidogyne Hapla)	,	
7	t Knot Nematode (Meloidogyne arenaria)		
\equiv	ematode (Rotylenchulus reniformis)		
OTHER DI	SEASE NOT ON FORM (Specify):		
0	Server of the result of the specify):	3	
20. PHYSIOLOGICAL R	ESPONSES: (Enter 0 = Not Tested; 1 = Susc	≠ptible; 2 = Resistant)	
★ 1()	is on Calcareous Soil		
Other (Speci	fy)		
1. INSECT REACTION:	(Enter 0 = Not Tested; 1 = Susceptible; 2 =		
1 _ 1	Beetle (Epilachna varivestis)		
	lopper (Empoasca fabae)		
	y/		
	RIETY MOST CLOSELY RESEMBLES TH	AT SUBMITTED.	
CHARACTER Plant Shape	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Leaf Shape	A 6297 A 6297	Seed Coat Luster	A6297
Leaf Color	A6297	Seed Size	NK S59-95
		Seed Shape	NK S59-95
Leaf Size	A 6297	Seedling Pigmentation	A 6297

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE	NO.
	MATURITY			CM Width	CM Length	% Protein	% Oil	G/100 SEEDS	SEEDS/ POD
HBK 5991 Submitted	133	1.0	75	7.6	13.5	36.1	20.4	14	
A 6297 Name of Similar Variety	137	2.0	90	7.6	13.8	37.2	19.2	13	

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

- 1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
- 2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
- 3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A₂ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
- 4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

EXHIBIT D

HORNBECK SEED COMPANY, INC. APPLICATION FOR HBK 5991

ADDITIONAL DESCRIPTION OF VARIETY

HBK 5991 is an F_4 selection composited in the F_5 generation from the cross A6297 x NK S59-95. Plants are medium height with white flowers, tawny pubescence and tan pods. Seeds are dull, yellow with light to dark black hila averaging about 3200 seed per pound. HBK 5991 is resistant to stem canker, sudden death syndrome and race 3 of soybean cyst nematode. HBK 5991 is moderate resistant to race 14 of SCN and susceptible to Phytophthora root rot as far as we know but shows strong evidence of being highly field tolerant to PRR. It is susceptible to frogeye leaf spot with a field rating of 5 out of a scale of 1-10. HBK 5991 has good standability and yields extremely well across many different soil types.

. . . .

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE	The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.				
EXHIBIT E STATEMENT OF THE BASIS OF OWNERSHIP	Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).				
1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME			
Hornbeck Seed Co., Inc.	нвк х591-98	нвк 5991			
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)	5. TELEPHONE (include area code)	6. FAX (include area code)			
P.O. Box 472	870-946-2087	870-946-3253			
210 Drier Road	7. PVPO NUMBER	,			
DeWitt, Arkansas 72042	Application NO. 20	00000108,Soybean,			
8. Does the applicant own all rights to the variety? Mark an "X" in appropri	iate block. If no, please explain.	YES NO			
	8				
9. Is the applicant (individual or company) a U.S. national or U.S. based or	ompany? [YES NO			
If no, give name of country	L	X 123			
10. Is the applicant the original owner? YES X	one of the f	ollowing:			
a. If original rights to variety were owned by individual(s), is (are) the or	iginal owner(s) a U.S. national(s)?				
☐ YES ☐ N	O If no, give name of country				
 b. If original rights to variety were owned by a company(ies), is(are) the 	original owner(s) a U.S. based company	γ?			
¥YES □ N	O If no, give name of country				
11. Additional explanation on ownership (if needed, use reverse for extra sp	pace):				
Original owner or breeder worked for variety in the U.S. Through purcha eligible to PVP the variety since it	ise of the variety Ho	ny and developed the ornbeck Seed Co., is			
entropy of the second of the s					
PLEASE NOTE:					
Plant variety protection can be afforded only to owners (not licensees) who meet or	ne of the following criteria:				
 If the rights to the variety are owned by the original breeder, that person must be which affords similar protection to nationals of the U.S. for the same genus and 	e a U.S. national, national of a UPOV memb species.	er country, or national of a country			
2. If the rights to the variety are owned by the company which employed the origin member country, or owned by nationals of a country which affords similar protections.	nal breeder(s), the company must be U.S. baction to nationals of the U.S. for the same g	sed, owned by nationals of a UPOV genus and species.			

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to compete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex_religion, age, disability, political beliefs, and marital or familial status.

(Not all prohibited bases apply to all programs). Persons with disabilities who require alternative means for communication of program information (braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2500 (voice and TDD).

To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call 1-800-245-6340 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.